

Remarks:

Reconsideration of the application is requested.

Claims 1-7 remain in the application. Claim 1 has been amended.

In item 2 on pages 2-3 of the above-mentioned Office action, claims 1-4 have been rejected as being unpatentable over Whetsel (US Pat. No. 6,326,801) in view of Krivy et al. (US Pat. No. 6,239,590) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references. However, the language of claim 1 has been amended to even more clearly recite the invention of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

calibrating the test system, including the probe card, by using the reference probe as a reference point for a respective signal path and adjusting the signal path to obtain same propagation-times for all signals.

Neither Whetsel nor Krivy et al. disclose the use of a special needle probe card. Krivy et al. only mention that conventional probe cards such as a needle probe card can be used instead of the probe card 32 as shown in Fig. 7 of Krivy et al. (see column 7, line 23). In contrast, according to the invention of the instant application, the calibration includes calibrating the probe card.

Fig. 15A of Whetsel shows a wafer with an array of dies, the connecting pads of which are electrically connected to probe areas on the periphery of the wafer. The appertaining conducting paths are applied to the wafer itself. There is no need for an additional probe card. The probe areas described by Whetsel are one possible solution of the problem of how to circumvent the necessity of applying needles or other probing instruments that possibly cause some damage to the contacting areas. Thus, in the arrangement of Whetsel, the application of an additional probe card or test substrate will be of no use.

A combination of the teachings of Whetsel and Krivy et al. could only lead to an arrangement in which the probe card is connected to the probe areas. This would not result in an improvement as compared to the prior art, nor would it lead to the inventive method using a special test substrate provided

for a connection of probe needles according to the invention of the instant application.

The references cited by the Examiner do not show how a calibration of the test system can be achieved in order to obtain the same propagation-times of all signals. According to the invention of the instant application, the reference probe is used as a reference point for a respective signal path. The calibration takes place by applying a probe of a needle probe card and a reference probe to the contact points that are connected by the appertaining conductor track. This calibration does not affect the location of the probe card for the purpose of connecting the contact points as taught by Krivy et al., and therefore does not refer to this location.

According to the method of the invention of the instant application, the calibration is performed by adjusting the different signal path lengths by appropriate arrangement of the conductor tracks. The holder into which wafers with semiconductor devices are inserted to permit an accurate positioning of the wafer is also sufficient for a correct location of the test substrate.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is,

therefore, believed to be patentable over the art and since claims 2-4 are ultimately dependent on claim 1, they are believed to be patentable as well.

In item 3 on page 3 of the above-mentioned Office action, claims 5-7 have been rejected as being unpatentable over Whetsel under 35 U.S.C. § 103(a).

Claims 5-6 are believed to be patentable because they are dependent on claim 1, which is believed to be patentable as discussed above.

Claim 7 calls for, inter alia:

a plurality of connecting contact points connected in pairs, said contact points of said pairs being disposed at mutually different distances from one another, and a plurality of conductor tracks of substantially equal length respectively connecting said pairs of contact points.

The Examiner has stated in the forth paragraph on page 3 of the Office action that Whetsel discloses the contact points of the pairs being disposed at mutually different distances from one another. However, as can be clearly seen from Fig. 15A of Whetsel, the connecting contacts pairs (1, 8 and 16, 9 and so on) are disposed at identical distances from one other. In contrast, as can be seen from Fig. 2 of the instant application, the connecting contact pairs (21, 31; 22, 32; 23, 33; 24, 34) are disposed at different distances from one

another; however, the conductor tracks (10, 20, 30, 40) respectively connecting these contact pairs are of substantially equal length.

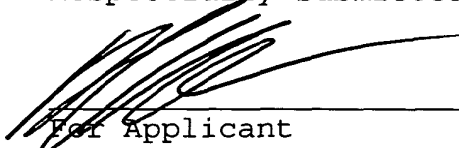
It is accordingly believed to be clear that Whetsel does not show or suggest the features of claims 7. Claim 7 is, therefore, believed to be patentable over Whetsel.

In view of the foregoing, reconsideration and allowance of claims 1-7 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


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Marked-Up Version of the Amended Claims:

Claim 1(amended). A calibration method for a test system wherein semiconductor components are tested by making contact with a component to be tested via a probe card, the method which comprises:

providing a test substrate having mutually separated connecting contact points for a probe of a probe card, having mutually separated further connecting contact points for a reference probe, and having conductor tracks each connecting one of the connecting contact points to a respective one of the further connecting contact points to define contact point pairs;

placing a probe of a probe card on a connecting contact point and placing a reference probe onto the further connecting contact point of a respective contact point pair; and

calibrating the test system, including the probe card, by using the reference probe as a reference point for a respective signal path and adjusting the signal path to obtain same propagation-times for all signals.